David A. Goldberg
Associate Professor
Operations Research and Information Engineering (ORIE)
Cornell University

I. EARNED DEGREES

ED1. Massachusetts Institute of Technology. Cambridge, MA.
- Ph.D. in Operations Research. May 2011.
  - Dissertation: Large scale queueing systems, asymptotics and insights.
  - Adviser: Professor David Gamarnik.

ED2. Columbia University. New York, NY.
- B.S. in Computer Science, minors in Applied Math and Operations Research. May 2006.

II. EMPLOYMENT HISTORY

EH1. Associate Professor (with tenure). Cornell University. Operations Research and Information Engineering. Ithaca, NY. 2018 - Present.
EH2. Associate Professor. Cornell University. Operations Research and Information Engineering. Ithaca, NY. 2017 – 2018.
EH3. A. Russell Chandler III Associate Professor (with Tenure). Georgia Institute of Technology. H. Milton Stewart School of Industrial and Systems Engineering. Atlanta, GA. 2017.
EH4. A. Russell Chandler III Assistant Professor. Georgia Institute of Technology. H. Milton Stewart School of Industrial and Systems Engineering. Atlanta, GA. 02/2016 - 2017.
EH5. Assistant Professor. Georgia Institute of Technology. H. Milton Stewart School of Industrial and Systems Engineering. Atlanta, GA. 08/2011 - 02/2016.
EH6. IBM T.J. Watson Research Center. Yorktown Heights, NY. 06/2010 - 08/2010.
EH7. Actuarial Intern. Chubb Group. Whitehouse Station, NJ. 06/2005 - 08/2005.
EH8. Computer Programmer. Columbia Center for New Media Teaching and Learning. NY, NY. 2003 - 2004.

III. HONORS AND AWARDS

A. International or National Awards

INA1. INFORMS Applied Probability Society Best Publication Award. 2019.
INA2. INFORMS Nicholson student paper competition first place. 2019.
INA3. INFORMS finance best student paper competition finalist. 2018.
INA4. Overseas Chinese Scholars Association in Management Science and Engineering best paper award third place. 2017.
INA5. INFORMS JFIG paper competition second place. 2015.
INA6. INFORMS Nicholson student paper competition first place. 2015.
INA7. National Science Foundation CAREER award. 2015.
INA8. MSOM student paper competition finalist. 2014.
INA9. INFORMS Nicholson student paper competition finalist. 2010.
INA10. National Defense Science and Engineering Graduate Fellowship. 2006-2009.

B. Institute or School Awards

ISA1. A. Russell Chandler III Professorship. Georgia Tech. 2016 – 2017.
ISA2. Class of 1969 Teaching Fellow. Georgia Tech. 2012-2013.
ISA3. Computer Science Department Award of Excellence. Columbia University. 2006.

IV. RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITIES

(Note: names of advisees, postdocs, and visiting students in **bold;** work for which authors listed alphabetically marked with a @; selected talks given by advisees, postdocs, and visiting students on joint work marked with a ^)

A. PUBLISHED BOOKS, BOOK CHAPTERS, AND EDITED VOLUMES

No data.

B. REFEREED PUBLICATIONS AND SUBMITTED ARTICLES

B1. Published and Accepted Journal Articles

J1. I.P. Fainmesser and D. Goldberg. Cooperation in partly observable networked markets. Games and Economic Behavior, volume 107, 2018, pp. 220-237.@

J2. **L. Xin** and D. Goldberg. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. Management Science, volume 64, no. 1, 2017, pp. 437-452. **INFORMS Applied Probability Society Best Publication Award 2019. INFORMS Nicholson student paper competition first place 2015. INFORMS JFIG paper competition second place 2015. Selected for MSOM Supply Chain SIG 2015.**

J3. **L. Xin** and D. Goldberg. Optimality gap of constant-order policies decays exponentially in the lead time for lost sales models. Operations Research, Volume 64, no. 6, 2016, pp. 1556 – 1565. **INFORMS Applied Probability Society Best Publication Award 2019. MSOM student paper competition finalist 2014***.*

J4. D. Goldberg, D. Katz, Y. Lu, M. Sharma, and M. Squillante. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. Mathematics of Operations Research, Volume 41, no. 3, 2016, pp. 898 - 913.@ **INFORMS Applied Probability Society Best Publication Award 2019.**

J5. D. Goldberg. Second-order Markov random fields for independent sets on the infinite Cayley tree. Annals of Applied Probability, vol. 26, no. 5, 2016, pp. 2626 – 2660.

J6. D. Gamarnik, D. Goldberg, and T. Weber. Correlation decay in random decision networks. Mathematics of Operations Research, Volume 29, no. 2, 2013, pp. 229-261. @

J7. D. Gamarnik and D. Goldberg. Steady-state GI/GI/n queue in the Halfin-Whitt regime. Annals of Applied Probability, vol. 23, no. 6, 2013, pp. 2382 – 2419.@

J8. D. Gamarnik and D. Goldberg. On the rate of convergence to stationarity of the M/M/n queue in the Halfin-Whitt regime. Annals of Applied Probability, vol. 23, no. 5, 2013, pp. 1879 – 1912. **INFORMS Nicholson student paper competition finalist 2010***.@*

J9. V. Chernyak, M. Chertkov, D. Goldberg, and K. Turistyn. Non-equilibrium statistical physics of currents in queuing networks. Journal of Statistical Physics, vol. 140, no. 5, 2010, pp. 819-845.@

J10. D. Gamarnik and D. Goldberg. Randomized greedy algorithms for independent sets and matchings in regular graphs: exact results and finite girth corrections. Combinatorics, Probability and Computing, vol. 19, Issue 1, Jan. 2010, pp.61-85.@

J11. D. Goldberg and W. Whitt. The last departure time from an M_t/G/infinity queue with a terminating arrival process. Queueing Systems, vol. 58, No. 2, Feb. 2008, pp.77-104.@

J12. C. Crow IV, D. Goldberg, and W. Whitt. Two-moment approximations for maxima. Operations Research, vol. 55, No. 3, May-June 2007, pp. 532-548.@

B2. Conference Presentation with Proceedings (Refereed)

CPP1. D. Gamarnik, D. Goldberg, and T. Weber. PTAS for maximum weight independent set problem with random weights in bounded degree graphs. SODA 2010. Austin, TX.@

B3. Other Refereed Material

No data.

B4. Submitted Journal Articles (with date of first submission)

SJ1. D. Goldberg, M. Reiman, and Q. Wang. A survey of recent progress in the asymptotic analysis of inventory systems. First submitted 11/2019.

SJ2. **Y. Chen** and D. Goldberg. Beating the curse of dimensionality in options pricing and optimal stopping. First submitted 7/2018. **INFORMS Nicholson student paper competition first place 2019. INFORMS finance best student paper competition finalist 2018**. Arxiv link: https://arxiv.org/abs/1807.02227

SJ3. **D. Mukherjee, Y. Li,** and D. Goldberg. Large deviations analysis for the M/H_2/n + M queue in the Halfin-Whitt regime. First submitted 3/2018. Arxiv link: https://arxiv.org/abs/1803.01082

SJ4. **Y. Li** and D. Goldberg. Heavy-tailed queues in the Halfin-Whitt regime. First submitted 7/2017. Arxiv link: https://arxiv.org/abs/1707.07775 .

SJ5. **Y. Li** and D. Goldberg. Simple and explicit bounds for multi-server queues with universal 1 / (1 - rho) scaling. First submitted 6/2017. Arxiv link: https://arxiv.org/abs/1707.07775 .

SJ6. D. Goldberg. On the steady-state probability of delay and large negative deviations for the GI/GI/n queue in the Halfin-Whitt regime. First submitted 6/2013. Arxiv link: http://arxiv.org/abs/1307.0241 .

SJ7. **L. Xin** and D. Goldberg. Distributionally robust inventory control when demand is a martingale. First submitted 11/2015. Arxiv link: http://arxiv.org/abs/1511.09437 . **Overseas Chinese Scholars Association in Management Science and Engineering best paper award third place. 2017.**

SJ8. **L. Xin**, D. Goldberg, and A. Shapiro. Time (in)consistency of multistage distributionally robust inventory models with moment constraints. First submitted 4/2013. Arxiv link: http://arxiv.org/abs/1304.3074.

C. Other Publications and Creative Products

C1. Conference Presentations with refereed abstract

CPR1. A new approach to high-dimensional online decision making. MSOM 2019. Singapore, Singapore.

CPR2. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. MSOM 2015. Selected for supply chain SIG. Toronto, Canada.

CPR3. Time consistency and dynamic formulations in inventory control. POMS 2015. Washington D.C.

CPR4. Optimality gap of constant-order policies decays exponentially in the lead time for lost sales models. POMS 2015. Washington D.C.^

CPR5. Optimality gap of constant-order policies decays exponentially in the lead time for lost sales models. ORIE Workshop on data-driven decision making. Ithaca, NY.^

CPR6. Distributionally robust inventory control when demand is a martingale. MSOM 2014. Seattle, WA.^

CPR7. Distributionally robust inventory control when demand is a martingale. POMS 2014. Atlanta, GA.^

CPR8. Asymptotic optimality of constant capacity allocation policies for dynamic resource planning. MAMA 2014. Austin, TX.^

CPR9. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. MSOM 2013. Fontainebleau, France.

CPR10. Asymptotic optimality of constant-order policies for lost sales inventory models

with large lead times. POMS 2013. Denver, CO.^

C2. Software

So1. Co-Developer of Shipper Software Package (with C. Crow IV and W. Whitt). 2003-06.

- Developed software to perform queueing analysis for problems related to Homeland Security. Analyzed the delays generated by inspecting containers for nuclear weapons at ports.

C3. Patents

No data.

C4. Other Creative Products

No data.

D. PRESENTATIONS

D1. Keynote Addresses and Plenary Lectures

KP1. Beating the curse of dimensionality in options pricing and optimal stopping. New York City OPS day, sponsored by Columbia University, Cornell University, and New York University. 2019. New York, NY.

KP2a. Beating the curse of dimensionality in options pricing and optimal stopping. Lunteren conference of the Dutch Network on the Mathematics Operations Research. 2019. Lunteren, NL.

KP2b. Simple and explicit bounds for multi-server queues with universal 1/(1-rho) (and better) scaling. Lunteren conference of the Dutch Network on the Mathematics Operations Research. 2019. Lunteren, NL.

D2. Invited Conference and Workshop Presentations

ICP1. Beating the curse of dimensionality in options pricing and optimal stopping. 2019 Finger Lakes Probability Seminar. Cornell University. 2019. Ithaca, NY.^

ICP2. Beating the curse of dimensionality in options pricing and optimal stopping. Symposium on Optimal Stopping in Memory of Larry Shepp. 2018. Houston, TX.

ICP3. Simple and explicit bounds for multi-server queues with universal 1/(1 - rho) (and better) scaling. Mostly OM Workshop. 2017. Beijing, China.

ICP4. Distributionally robust inventory control when demand is a martingale. Workshop on robust optimization in applied probability. 2015. Eindhoven, Netherlands.

ICP5. Beating the curse of dimensionality in inventory problems with lead times (or how a ``random walk / queueing perspective" helped make progress on a fundamental problem in inventory control). Workshop for young European queueing theorists. 2015. Eindhoven, Netherlands.

ICP6. Distributionally robust inventory control when demand is a martingale. Workshop on ``Control and Performance of Large-scale Networks". University of Eindhoven. 2014. Eindhoven, Netherlands.

ICP7. Recent progress at the intersection of inventory control and applied probability. Stochastic Networks. 2014. Amsterdam, Netherlands.

ICP8. Higher order Markov random fields for independent sets. Workshop on Networks, Learning, and Games. University of Illinois Initiative for Mathematical Sciences and Engineering. 2014. Urbana-Champaign, IL.

ICP9. On the steady-state of the GI/GI/n queue in the Halfin-Whitt regime. Workshop on Stochastic Processes in Communication Networks for Young Researchers. 2010. Edinburgh, UK.

D3. Conference and Workshop Presentations

CP1. Beating the curse of dimensionality in optimal stopping. INFORMS 2019. Seattle, WA.^

CP2. A new approach to high-dimensional dynamic pricing. INFORMS 2019. Seattle, WA.^

CP3. A new approach to high-dimensional online decision making. INFORMS 2019. Seattle, WA.^

CP4. Beating the curse of dimensionality in options pricing and optimal stopping. INFORMS 2019. Seattle, WA.

CP5. Beating the curse of dimensionality in options pricing and optimal stopping. INFORMS APS 2019. Brisbane, AU.

CP6. A new approach to high-dimensional online decision-making. INFORMS APS 2019. Brisbane, AU.^

CP7. Beating the curse of dimensionality in options pricing and optimal stopping. INFORMS 2018. Phoenix, AZ.^

CP8. Recent Progress at the Intersection of Optimal Stopping and Bandits. INFORMS 2018. Phoenix, AZ.^

CP9. Large Deviations Analysis for Non-Markovian Multi-server Queues with Abandonments in the QED Regime. INFORMS 2018. Phoenix, AZ.

CP10. Weak convergence approach to the multi-arm bandit problem. INFORMS APS 2017. Evanston, IL.

CP11. Simple and explicit bounds for multi-server queues with universal 1/(1 - rho) scaling. INFORMS APS 2017. Evanston, IL.

CP12. Beating the curse of dimensionality in inventory problems with lead times. INFORMS APS 2017. Evanston, IL.

CP13. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. INFORMS JFIG paper competition session. INFORMS 2015. Philadelphia, PA.

CP14. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems: theory and practice. INFORMS Nicholson student paper competition session. INFORMS 2015. Philadelphia, PA.^

CP15. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. INFORMS 2015. Philadelphia, PA.^

CP16. Distributionally robust inventory control when demand is a martingale. INFORMS 2015. Philadelphia, PA.^

CP17. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. ISMP 2015. Pittsburgh, PA.^

CP18. Distributionally robust inventory control when demand is a martingale. ISMP 2015. Pittsburgh, PA.

CP19. Beating the curse of dimensionality in inventory problems with lead times. INFORMS APS 2015. Istanbul, Turkey.

CP20. Asymptotic optimality of Tailored Base-Surge policies in dual-sourcing inventory systems. INFORMS APS 2015. Istanbul, Turkey.

CP21. Heavy tails in the Halfin-Whitt regime. INFORMS APS 2015. Istanbul, Turkey.

CP22. Stochastic comparison approach to multi-server queues. INFORMS APS 2015. Istanbul, Turkey.

CP23. Stochastic comparison approach to multi-server queues. INFORMS 2014. San Fransisco, CA.

CP24. Optimality gap of constant-order policies decays exponentially in the lead time for

lost sales models. INFORMS 2014. San Fransisco, CA.^

CP25. Distributionally robust inventory control when demand is a martingale. The SIAM conference on Optimization 2014. San Diego, CA.^

CP26. Time (in)consistency of multi-stage distributionally robust inventory models with moment constraints. INFORMS 2013. Minneapolis, MN.^

CP27. Distributionally robust inventory control when demand is a martingale. INFORMS 2013. Minneapolis, MN.^

CP28. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. INFORMS 2013. Minneapolis, MN.

CP29. Asymptotic properties of a class of stochastic loss models. INFORMS 2013. Minneapolis, MN.

CP30. Distributionally robust inventory control when demand is a martingale. INFORMS APS 2013. San Jose, Costa Rica.

CP31. Higher order Markov random fields for independent sets. INFORMS APS 2013. San Jose, Costa Rica.

CP32. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. INFORMS APS 2013. San Jose, Costa Rica.

CP33. Time (in)consistency of multi-stage distributionally robust inventory models with moment constraints. XIII International Conference on Stochastic Programming (ICSP). Bergamo, Italy.^

CP34. Higher order Markov random fields for independent sets. INFORMS 2012. Phoenix, AZ.

CP35. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. INFORMS 2012. Phoenix, AZ.

CP36. Lower bounds for the steady-state M/GI/n queue in the Halfin-Whitt regime. INFORMS 2011. Charlotte, NC.

CP37. On the steady-state probability of delay in the Halfin-Whitt regime. INFORMS 2011. Charlotte, NC.

CP38. On the steady-state probability of delay in the Halfin-Whitt regime. INFORMS Midwestern Conference 2011. Columbus, OH.

CP39. On the steady-state probability of delay in the Halfin-Whitt regime. INFORMS APS 2011. Stockholm, Sweden.

CP40. On the rate of convergence to stationarity of the M/M/n queue in the Halfin-Whitt regime. INFORMS 2010. Austin, TX.

CP41. On the steady-state of the GI/GI/n Queue in the Halfin-Whitt regime. INFORMS 2010. Austin, TX.

CP42. On the steady-state of the GI/GI/n Queue in the Halfin-Whitt regime. INFORMS APS 2009. Ithaca, NY.

CP43. Randomized greedy algorithm for finding large independent sets and matchings. INFORMS APS 2009. Ithaca, NY.

CP44. On the rate of convergence to stationarity of the M/M/n queue in the Halfin-Whitt regime. INFORMS APS 2009. Ithaca, NY.

CP45. On the rate of convergence to stationarity of the M/M/n Queue in the Halfin-Whitt regime. INFORMS 2008. Washington, DC.

CP46. On the rate of convergence to stationarity of the M/M/n queue in the Halfin-Whitt regime. Stochastic Networks 2008. Paris, France.

D4. Invited Seminar Presentations

IS1. Beating the curse of dimensionality in options pricing and optimal stopping.

Stanford University graduate school of Business. OIT seminar series. To be given in 2020. Stanford, CA.

IS2. Beating the curse of dimensionality in options pricing and optimal stopping. Duke University Fuqua School of Business. Decision Sciences Seminar. To be given in 2020. Durham, NC.

IS3. Beating the curse of dimensionality in options pricing and optimal stopping. Cornell University. CAM Seminar. 2019. Ithaca, NY.

IS4. Beating the curse of dimensionality in options pricing and optimal stopping. UT Dallas. OM Seminar. 2019. Dallas, TX.

IS5. Beating the curse of dimensionality in options pricing and optimal stopping. University of Michigan. Fin Math Seminar. 2019. Ann Arbor, MI.

IS6. Beating the curse of dimensionality in options pricing and optimal stopping. IBM Research. Applied Probability Seminar. 2019. Yorktown Heights, NY.

IS7. Beating the curse of dimensionality in options pricing and optimal stopping. Columbia University. Decision, Risk, and Operations Seminar. 2018. New York, NY.

IS8. Beating the curse of dimensionality in options pricing and optimal stopping. MIT. Operations Research Center Seminar. 2018. Cambridge, MA.

IS9. Beating the curse of dimensionality in inventory problems with lead times. Princeton University. ORFE Department Seminar. 2017. Princeton, NJ.

IS10. Beating the curse of dimensionality in inventory problems with lead times. Cornell University. CAM Colloquium. 2017. Ithaca, NY.

IS11. Beating the curse of dimensionality in inventory problems with lead times. Auburn University. ISE Seminar Series. 2017. Auburn, AL.

IS12. Distributionally robust demand forecasting and inventory control with martingale uncertainty sets. Georgia Institute of Technology. Stochastics Seminar. 2017. Atlanta, GA.

IS13. Distributionally robust demand forecasting and inventory control with martingale uncertainty sets. Columbia University. Applied Probability and Risk Seminar. 2016. New York, NY.

IS14. Beating the curse of dimensionality in inventory problems with lead times. University of Michigan. IOE Department Seminar Series. 2016. Ann Arbor, MI.

IS15. Beating the curse of dimensionality in inventory problems with lead times. University of Chicago Booth School of Business. Operations seminar. 2016. Chicago, IL.

IS16. Beating the curse of dimensionality in inventory problems with lead times. Department of Industrial Engineering and Management Sciences at Northwestern University. IEMS Seminar Series. 2016. Evanston, IL.

IS17. Beating the curse of dimensionality in inventory problems with lead times. Department of industrial engineering and operations research at Columbia University. IEOR-DRO Seminar Series. 2015. New York, NY.

IS18. Beating the curse of dimensionality in inventory problems with lead times. Massachusetts Institute of Technology. David Simchi-Levi's research seminar series. 2015. Cambridge, MA.

IS19. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. Tata Institute of Fundamental Research, School of Technology and Computer Science. Institute Seminar. 2014. Mumbai, India.

IS20. Asymptotic optimality of constant-order policies for lost sales inventory models

with large lead times. Duke University Fuqua School of Business. Decision Sciences Seminar. 2013. Durham, NC.

IS21. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. Carnegie Mellon University Tepper School of Business. Operations Management Seminar. 2013. Pittsburgh, PA.

IS22. Higher order Markov random fields for independent sets. Georgia Tech. Combinatorics Seminar. 2013. Atlanta, GA.

IS23. Asymptotic optimality of constant-order policies for lost sales inventory models with large lead times. University of Pittsburgh. Industrial Engineering Seminar. 2012. Pittsburgh, PA.

IS24. On the steady-state of the GI/GI/n queue in the Halfin-Whitt regime. Georgia Tech. Stochastics seminar. 2011. Atlanta, GA.

IS25. On the Steady-state of the GI/GI/n queue in the Halfin-Whitt regime. IBM Research. Applied probability seminar. 2010. Yorktown Heights, NY.

IS26. On the steady-state of the GI/GI/n queue in the Halfin-Whitt regime. Georgia Tech. ISyE seminar. 2010. Atlanta, GA.

IS27. PTAS for maximum weight independent set problem with random weights in bounded degree graphs. Carnegie Mellon University. Probability and Mathematical Finance Seminar. 2009. Pittsburgh, PA.

IS28. New approaches to inventory control: algorithms and asymptotics. Department of industrial and enterprise systems engineering at the University of Illinois at Urbana-Champaign. 2015. Urbana-Champaign, IL.^

IS29. New approaches to inventory control: algorithms and asymptotics. Department of industrial engineering at the University of Pittsburgh. 2015. Pittsburgh, PA.^

IS30. New approaches to inventory control: algorithms and asymptotics. Naveen Jindall school of management at University of Texas – Dallas. 2015. Dallas, TX.^

IS31. New approaches to inventory control: algorithms and asymptotics. Department of operations research and information engineering at Cornell University. 2014. Ithaca, NY.^

IS32. New approaches to inventory control: algorithms and asymptotics. Stern school of business at New York University. 2014. New York, NY.^

IS33. New approaches to inventory control: algorithms and asymptotics. Amazon annual Graduate Research Symposium. 2014. Seattle, WA.^

D5. Other Presentations

No data.

E. GRANTS AND CONTRACTS

E1. As Principal Investigator

PI1. **CAREER:** Embracing Randomness and Uncertainty in Inventory Problems: Algorithms and Insights**.** National Science Foundation. **NSF** Organization: CMMI Division of Civil, Mechanical, and Manufacturing Innovation. Program: Operations Research. Single PI: D. Goldberg. June 1, 2015 – May 31, 2020. Award no. 1453929. **$500,000**.

PI2. Stochastic comparison approach to parallel server queues. National Science Foundation. **NSF** Organization: CMMI Division of Civil, Mechanical, and Manufacturing Innovation. Program: Operations Research. Single PI: D. Goldberg. August 15, 2013 – July 31, 2016. Award no. 1333457. **$207,022**.

E2. As Co-Principal Investigator

No data.

E3. As Senior Personnel or Contributor

No data.

E4. Pending Proposals

No data.

E5. Proposals Submitted But Not Funded (last two years)

No data.

F. OTHER SCHOLARLY AND CREATIVE ACCOMPLISHMENTS

No data.

G. SOCIETAL AND POLICY IMPACTS

SPI1. Big Data Collaboration with Georgia Tech and Atlanta Police Departments. Atlanta, GA. 2014 - 2015.

- Analyzed crime data for the Georgia Tech and Atlanta police using big data analytics and machine learning techniques.
- Mentored several Georgia Tech ISyE Undergraduate students on this project, including Kyung Kim who was awarded a PURA research award for this work.
- Featured in Georgia Tech Newspaper ``The Whistle". 2015. Volume 40, No. 22.

H. Other Professional Activities

PA1. Academic consultant for Brigham and Womens Hospital (with R. Anderson and D. Gamarnik). Boston, MA. 2009.

- Analyzed patient flows for the General Medicine Department at Brigham and Womens Hospital using tools from queueing theory. Studied the impact of a policy change w.r.t. hospital beds, performed statistical analysis on arrival patterns and historical data.

V. TEACHING

A. COURSES TAUGHT

	Semester, Year	Course Number	Course Title	Number of Students
C1.	Fall, 2019	ORIE 3500/5500	Eng. Prob. and Stat. II	149
C2.	Spring, 2019	SYSEN5200	Systems Anal., Beh., Opt.	134
C3.	Fall, 2018	ORIE4120	Inv., Opt. Sup. Chain	25
C4.	Fall, 2018	ORIE7120	Math of Inv., Opt., Sup. Chain	4
C5.	Fall, 2018	ORIE7190	Acad. Street Smarts	1
C6.	Spring, 2018	SYSEN5200	Systems Anal., Beh., Opt.	106
C7.	Fall, 2017	ORIE6560	Multi-arm Bandits	12
C8.	Spring, 2017	ISYE4232	Advanced Stochastic Systems	53
C9.	Spring, 2017	ISYE6762	Stochastic Processes II	20
C10.	Fall, 2016	ISYE8813	Mathematics of Operations Research	14
C11.	Spring, 2016	ISYE6762	Stochastic Processes II	18
C12.	Fall, 2015	ISYE8813	Mathematics of Operations Research	12
C13.	Fall, 2015	ISYE2027	Probability with Apps	35
C14.	Spring, 2015	ISYE8813	Advanced Stochastic Models	10
C15.	Spring, 2015	ISYE6762	Stochastic Processes II	16
C16.	Fall, 2014	ISYE2027	Probability with Apps	53
C17.	Spring, 2014	ISYE6762	Stochastic Processes II	9
C18.	Fall, 2013	ISYE2027C	Probability with Apps	72
C19.	Fall, 2013	ISYE2027B	Probability with Apps	73
C20.	Spring, 2013	ISYE6762	Stochastic Processes II	21
C21.	Fall, 2012	ISYE2027	Probability with Apps	75

C22. Spring, 2012	ISYE6762	Stochastic Processes II	21
C23. Fall, 2011	ISYE2027	Probability with Apps	74

B. INDIVIDUAL STUDENT GUIDANCE

B1. Ph.D. Students

B.1.a. Graduated

PhD1. Linwei Xin, ISyE. Spring 2012 – Spring 2015.

- First position: Assistant Professor at University of Illinois at Urbana-Champaign, Department of Industrial and Enterprise Systems Engineering.
- Second position: Assistant Professor at The University of Chicago Booth School of Business. 2017 -
- Dissertation: New approaches to inventory control: algorithms, asymptotics and robustness.
- Successfully defended thesis in Spring 2015, graduated in Summer 2015.
- Winner of INFORMS Nicholson student paper competition first place 2015.
- Finalist in MSOM student paper competition 2014.
- Winner of ARC Fellowship. Spring 2013.
- Co-advised with Alex Shapiro.

PhD2. Yuan Li, ISyE. Spring 2014 – Spring 2017.

- First position: Amazon (industry).
- Dissertation: Stochastic comparison approach to multi-server queues: bounds, heavy tails and large deviations.
- Successfully defended thesis in Spring 2017, graduated in Spring 2017.

B.1.b. In Process

PhD3. Yilun Chen, ISyE. Summer 2015 – Present.

- Dissertation: High-dimensional optimal stopping : algorithms and applications.
- Winner of INFORMS Nicholson student paper competition first place 2019.
- Finalist in 2018 INFORMS finance best student paper competition.
- Passed qualifying exams at Georgia Tech.
- Passed A-Exam (thesis proposal) at Cornell.
- Now Ph.D. student at Cornell ORIE.

B2. M.S. Student Advising

Advising several Masters students in the ORIE and Systems Engineering M.Eng. programs. Cornell University. Fall 2017 – Present.

B2b. M.S. Student Project Advising

PRO1. Generating case studies from industry projects

- Youyi Qiu

PRO2. Macy's (co-advised with Jack Muckstadt)

- Anqi Ren
- Matthew Kim
- Kenny Shu
- Charlotte Wang

B3. Undergraduate Students

UG1. Shengbo Wang, ORIE. Fall 2019 - present.

- Research topic : inventory models with long lead time and fixed ordering cost.

UG2. Kim Kyung, ISyE. Spring 2014 – Fall 2015.

- Winner of PURA undergraduate research award (for our project) Fall 2015.
- Research topic: Applied stochastic models and crime analytics.

- Passed undergraduate research ISyE 4699.

UG3. Bingyi Bao, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Passed undergraduate research ISyE 4699.

UG4. Yang Dong, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Passed undergraduate research ISyE 4699.

UG5. Jin Young Kim, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Passed undergraduate research ISyE 4699.

UG6. Hojin Lee, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Registered for undergraduate research ISyE 4699.

UG7. Rachel Patel, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Registered for undergraduate research ISyE 4699.

UG8. David Wang, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Registered for undergraduate research ISyE 4699.

UG9. Yuanheng Wang, ISyE. Spring 2014 – Fall 2015.
- Research topic: Applied stochastic models and crime analytics.
- Registered for undergraduate research ISyE 4699.

UG10. Abubaker Abubaker, ISyE. Spring 2014.
- Research topic: Applied stochastic modeling.
- Passed undergraduate research ISyE 4699.

UG11. Haidan Zhou, ISyE. Spring 2014 – Fall 2014.
- Research topic: Applied stochastic modeling.
- Passed undergraduate research ISyE 4699.

UG12. Dylan Cross, ISyE. Fall 2013.
- Research topic: Advanced stochastic analysis.
- Passed undergraduate research ISyE 4699.

B3b. Undergraduate Student Advising

Advising several Undergraduate students in the ORIE program. Cornell University. Spring 2018 – Present.

B4. Service on thesis or dissertation committees

B4.a. Internal

TCI1. Pamela Badian-Pessot. Department: ORIE. Advisors: Mark Lewis and Doug Down. Successfully passed A-exam (thesis proposal) in 2018.

TCI2. Satya Malladi. Department: ISyE. Advisors: Alan Erera and Chip White. Successfully defended thesis in 2018.

TCI3. Weijun Ding. Department: ISyE. Advisor: Anton Kleywegt. Successfully defended thesis in 2016.

TCI4. Guido Lagos. Department: ISyE. Advisor: Ton Dieker. Successfully defended thesis in 2016.

TCI5. Justin Kirkby. Department: ISyE. Advisor: Shijie Deng. Successfully defended thesis in 2016.

TCI6. Daniel Silva. Department: ISyE. Advisor: Hayriye Ayhan. Successfully defended thesis in 2016.

TCI7. Tonghoon Suk. Department: ISyE. Advisor: Ton Dieker. Successfully defended thesis in 2016.

TCI8. Vinod Cheriyan. Department: ISyE. Advisor: Anton Kleywegt. Successfully defended thesis in 2014.

TCI9. Andriy Shapoval. Department: ISyE. Advisor: Eva Lee. Successfully defended thesis in 2014.

TCI10. Chien-Hung Chen. Department: ISyE. Advisor: Eva Lee. Successfully defended thesis in 2013.

B4.b. External

TCE1. Debankur Mukherjee. Eindhoven university of technology. Advisors: Sem Borst and Johan Leeuwaarden.

a. First position : Assistant Professor at Georgia Tech ISyE. 2019.

B4.c. Service on Cornell ORIE Q-exam Committees

B4.c.1. Yuxuan Liu (committee chair). 2019.

B4.c.2. Alyf Janmohamed. 2019.

B4.c.3. Rohan Sarkar. 2018.

B4.c.4. Angela Zhou (committee chair). 2017.

B4.c.5. Bing-Zhen Zhang. 2017.

B5. Mentorship of postdoctoral fellows or visiting scholars

M1. Wenchang Zhu. Fall 2019 at Cornell CAM and ORIE.

- Research topic: Inventory models with long lead times and fixed ordering costs.
- Visiting Ph.D. student from Shanghai Jiao Tong University.

M2. Debankur Mukherjee. Summer 2016 at ISyE.

- Research topic: Multi-server queues with abandonments.
- Visiting Ph.D. student from Eindhoven University of Technology, NL.
- First position : Assistant Professor at Georgia Tech ISyE. 2019.

M3. Kazuki Irie. Spring 2012 – Summer 2012 at ISyE.

- Research topic: Models for highway congestion.
- Undergraduate student from Ecole Centrale, France.
- Co-mentored with Bob Foley.

C. Other Teaching Activities

C1. Course Development

CD1. Designed advanced undergraduate elective ORIE4120 in quantitative inventory control

CD2. Designed advanced Ph.D. elective ORIE7120 in the mathematics of inventory Control

CD3. Co-designed 1-credit first-year Ph.D. seminar course ORIE7190 in ``academic street smarts"

CD4. Designed topics class ORIE 6560 Multi-arm bandits to provide a broad overview of the theory and application of multi-arm bandit models.

CD5. Designed topics class 8813 Advanced Stochastic Models to provide a broad overview of the theory and application of stochastic models in operations research.

C2. Course Improvement

CI1. Redesigned ORIE 3500 Course at Cornell.

CI2. Redesigned SYSEN 5200 Course at Cornell.

CI3. Developed detailed course notes with exercises and solutions for ISyE 2027 Probability with Apps, ISyE 6762 Stochastic Processes II, ISyE 8813 Mathematics

of Operations Research, and ISyE 4232 Advanced Stochastic Systems. These notes act as the textbook for the course when I teach these classes, and I am working to develop these notes into freely available online textbooks.

CI4. Piloted program to integrate elements of ISyE Senior Design into ISyE 2027 Probability with Apps.

C3. Professional Development/Continuing Education

PD1. Class of 1969 Teaching Fellow. Georgia Tech. 2012-2013.

C4. Other Teaching Activities

No data.

VI. SERVICE

A. PROFESSIONAL CONTRIBUTIONS

A1. Editorial Board Memberships

EB1. Operations Research editorial board. 2016 – Present.

EB2. Queueing Systems (QUESTA) editorial board. 2016 – Present.

EB3. Stochastic models editorial board. 2019 – Present.

A2. Society Offices, Activities, and Membership

Soc1. INFORMS JFIG paper competition co-chair. 2019.

Soc2. INCOSE, International Council on Systems Engineering. Member. 2018.

Soc3. Council member of the Applied Probability Society of INFORMS. 2015 – 2017.

Soc4. Served on an Ad-hoc committee to increase INFORMS professional society student enrollment. 2011.

Soc5. IIE, Institute of Industrial Engineers. Member. 2011-2012.

Soc6. INFORMS , Institute for Operations Research and Management Science. Member. 2008 – Present.

A3. Organization and Chairmanship of Technical Sessions, Workshops and Conferences

Org1. Co-organizer of Stochastic Networks 2020 workshop.

Org2. Organized a session titled ``High-dimensional MDP in OM" at INFORMS 2019.

Org3. Organized a session titled ``Optimal stopping and control" at INFORMS APS 2019.

Org4. Organized a session titled `` Bandits, Optimal Stopping, and Control" at INFORMS 2018.

Org5. Organized a session titled `` Optimization, Analysis, and Modeling of service systems" at INFORMS 2018.

Org6. Co-organizer of Applied^2 Probability Day at INFORMS APS 2019.

Org7. Program Committee member for INFORMS APS 2019.

Org8. Organized a session titled ``Machine Learning" at INFORMS 2017.

Org9. Cluster co-chair (with Rouba Ibrahim) for applied probability track at INFORMS 2016.

Org10. Co-organized (with Johan Leeuwaarden and Dick den Hertog) workshop on robust optimization in applied probability. 2015. Eindhoven, Netherlands.

Org11. Organized a panel titled "Future of Applied Probability" at INFORMS 2016.

Org12. Served as Publications Chair for ACM Sigmetrics 2015. Portland, OR.

Org13. Organized a session titled ``New directions in applied probability" at INFORMS 2015.

Org14. Organized a session titled ``Efficient algorithms for inventory control with combinatorially growing state-space" at ISMP 2015.

Org15. Organized a session titled ``New directions in applied probability" at INFORMS APS 2015.

Org16. Organized a session titled ``Inventory Management II" at POMS 2015.

Org17. Organized a session titled ``New directions in applied probability" at INFORMS 2014.
Org18. Co-organized (with Jeff Kharoufeh) a session titled ``Algorithmic and policy-level applications of probability" at INFORMS APS 2013.
Org19. Co-organized (with Ton Dieker) a session titled ``Advances in stochastic systems" at INFORMS 2013.

A4. Technical Journal or Conference Referee Activities

TA1. 2018 MSOM Service SIG Conference referee. Chapel Hill, NC.
TA2. 2017 INFORMS APS Student Paper Competition committee. Evanston, IL.
TA3. 2017 INFORMS Nicholson Student Paper Prize committee. Houston, TX.
TA4. 2017 MSOM Service SIG Conference referee. Chapel Hill, NC.
TA5. 2015 MSOM Supply Chain SIG Conference referee. Toronto, CA.
TA6. Served on the Technical PC for ACM Sigmetrics 2014. Austin, TX.
TA7. Refereeing for Journals:
- Operations Research, Mathematics of Operations Research, Management Science, Annals of Applied Probability, Annals of Probability, Journal of Applied Probability, Journal of Theoretical Probability, Stochastic Systems, Queueing Systems, Naval Research Logistics, Stochastic Analysis, IEEE Transactions on Automatic Control, SIAM Journal of Discrete Mathematics, Transactions on Modeling and Computer Simulation, INFORMS Journal on Computing.

A5. Proposal Panels and Reviews

PPR1. National Science Foundation (NSF): 1 panel 2014, 1 panel 2015, 1 panel 2016, 1 panel 2019.

A6. Other Involvement

OI1. National Science Foundation (NSF) workshop to design and communicate a framework for Broader Impact. Participant. 2016.

B. Public and Community Service

C. Institute Contributions

C1. Institute Committee Service

No data.

C2. College Committee Service

No data.

C3. School Committee Service

SS1. Organizer. ORIE Young Researchers Workshop. Cornell ORIE. 2019.
SS2. Chair. ORIE Hiring Committee. Cornell ORIE. 2019 - 2020.
SS3. Chair. Systems Engineering faculty search committee for a Professor of the practice in software systems engineering. Cornell Systems Engineering. Spring 2018 – 2019.
SS4. Chair. Systems Engineering Masters program strategic planning committee. Cornell Systems Engineering. Fall 2017 – 2018.
SS5. Systems Engineering Executive Committee. Cornell Systems Engineering. Fall 2017 – 2019.
SS6. ORIE Curricular Committee. Cornell ORIE. Fall 2017 – 2018.
SS7. ORIE Hiring Committee. Cornell ORIE. 2018-2019.
SS8. Systems Research / Ph.D. Committee. Cornell Systems Engineering. Fall 2017 – 2018.
SS9. ISyE Ph.D. Admissions Committee. Georgia Tech ISyE. Fall 2016 – Summer 2017.
SS10. ISyE Faculty Search Committee. Georgia Tech ISyE. Fall 2015 – Summer 2017.
SS11. Co-organized (with Alan Erera, Jane Ammons, and Edwin Romeijn) Georgia Tech ISyE

Alumni Reunion. Georgia Tech ISyE. Fall 2014.

SS12. Co-organized (with Alan Erera and Edwin Romeijn) annual Georgia Tech ISyE Party at the annual INFORMS conference. 2015 – 2017.

SS13. Co-organize (with the Cornell ORIE chair) annual Cornell ORIE Party at the annual INFORMS conference. 2017 - 2018.

SS14. ISyE Departmental Seminar co-founder and organizer. Georgia Tech ISyE. Fall 2013 - Fall 2015.

SS15. ISyE Graduate Committee. Georgia Tech ISyE. Spring 2013 - Summer 2017.

SS16. ISyE OR Coordinating committee. Georgia Tech ISyE. Spring 2015 – Summer 2017.

SS17. ISyE IT Committee. Georgia Tech ISyE. Fall 2012.

SS18. ISyE Strategic Plan Committee. Georgia Tech ISyE. Fall 2012.

SS19. ISyE Operations Research Colloquium organizer. Fall 2011- Fall 2013.

C4. Program Development: Research

No data.

C5. Program Development: Academic

PDA1. ARC graduate fellowship committee. Georgia Tech Algorithms and Randomness Center. 2013 – Present.

C6. Other Institute Service Contributions

OIS1. MIT Operations Research Center Alumni Day organizer. Fall 2011.